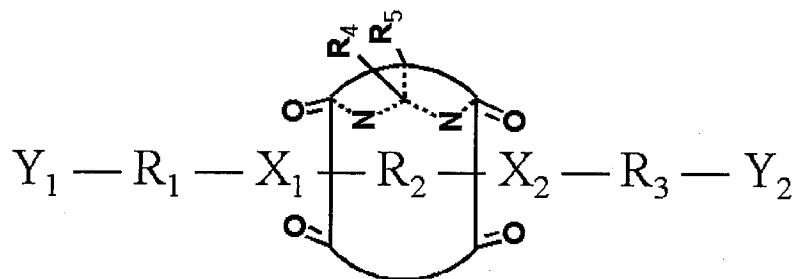


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

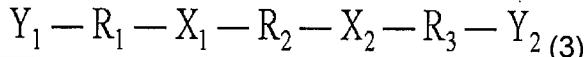
1. (Currently Amended) A solid substrate for a biochip comprising a compound represented by Formula 1 below:



(1)

wherein R₁, R₂, and R₃ are each independently saturated or unsaturated linear C₂-C₁₀ alkylene, ethyleneglycol oligomer, 1,4-substituted benzene, or 1,4-substituted pyridine; R₄ and R₅ are each independently hydrogen, an alkenyloxy group with an unsaturated bond end and a substituted or unsubstituted alkyl moiety of C₁-C₂₀, a carboxyalkylsulfinyloxy group with a substituted or unsubstituted alkyl moiety of C₁-C₂₀, a carboxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈, an aminoalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈, or a hydroxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈; X₁ and X₂ are each independently a positively charged functional group for ion-dipole interaction with an oxygen atom of cucurbituril or its derivative represented by Formula 2; Y₁ is a functional group for a linkage with a biomaterial comprising a gene or a protein; and Y₂ is a functional group capable of binding to the solid substrate, wherein the compound of Formula 1 bonded to the solid substrate provides a linkage layer with a predetermined spacing in the biochip by being bonded to the solid substrate; and

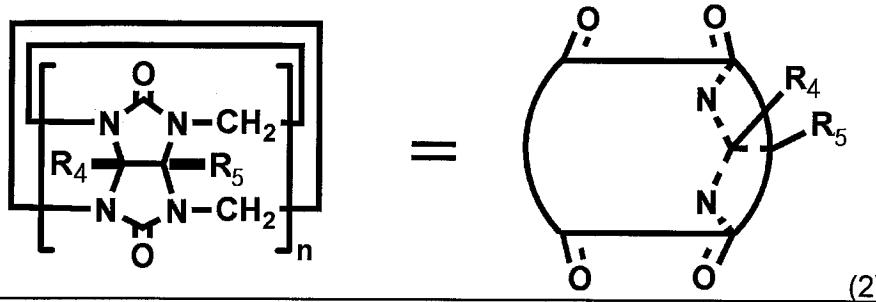
wherein a compound of Formula 3



(wherein R₁, R₂, R₃, X₁, X₂, Y₁, and Y₂ are as defined in Formula 1 above)

vertically passes through a cavity of cucurbituril or its derivative represented

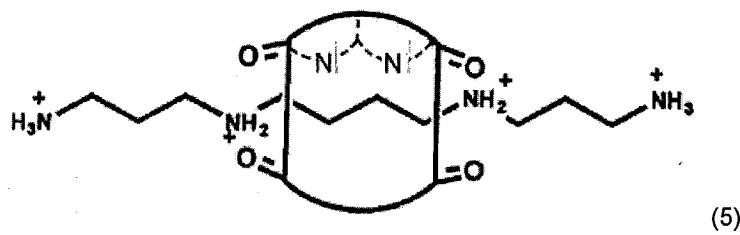
by Formula 2



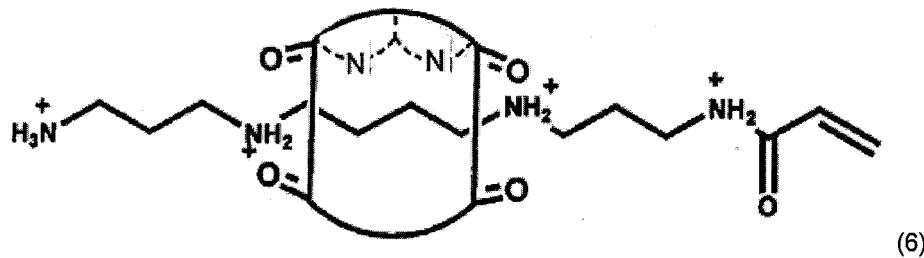
(wherein n is an integer of 4 to 20; and R_4 and R_5 are as defined in Formula 1 above).

2. (Previously Presented) The solid substrate of claim 1, wherein X_1 and X_2 are each independently secondary ammonium, 1,4-substituted pyridinium, or benzyl ammonium; and Y_1 and Y_2 are each independently a primary amine group, an amide group, an acrylamine group, an alkylester group, an aldehyde group, a carboxyl group, an alkoxy silane group, a halogenated acyl group, a hydroxyl group, a thiol group, a halogen group, a cyan group, an isocyan group, or an isothiocyan group.

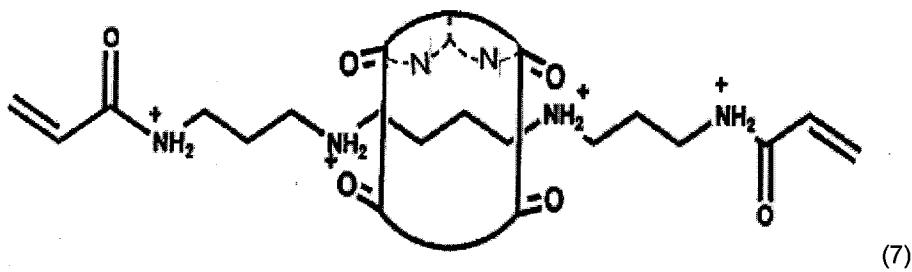
3. (Currently Amended) The solid substrate of claim 1, which wherein the compound of Formula 1 is selected from the group consisting of compounds represented by Formulae 5 through 13:



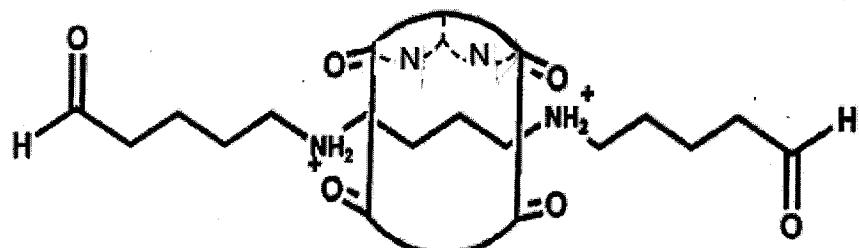
(5)



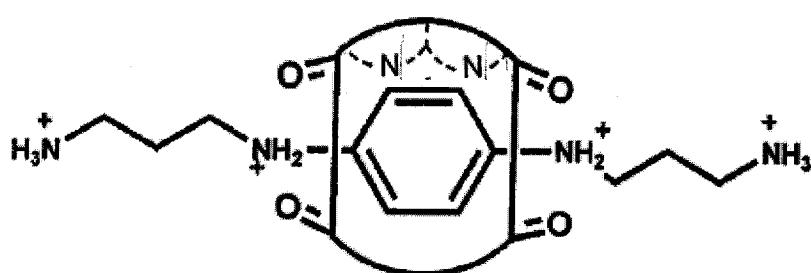
(6)



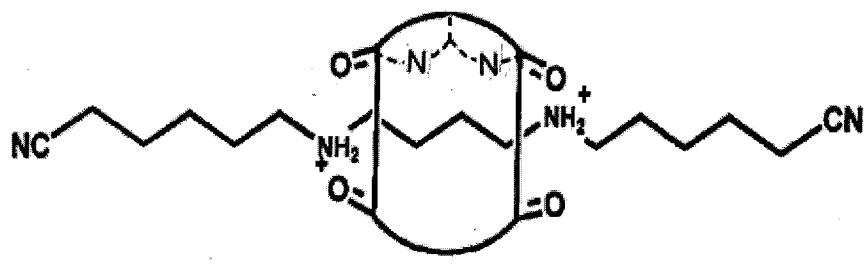
(7)



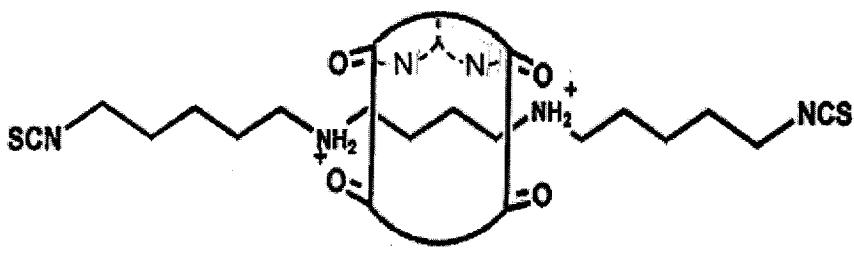
(8)



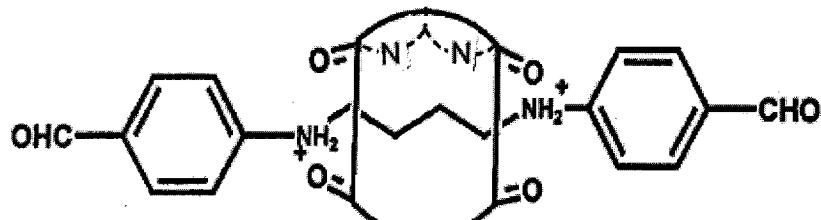
(9)



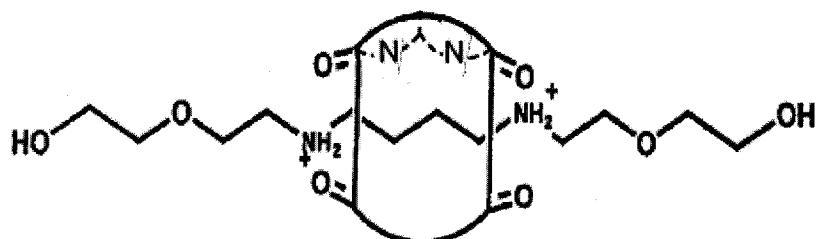
(10)



(11)



(12)



(13)

4. (Cancelled)

5. (Previously Presented) The solid substrate of claim 1, wherein the compound of Formula 1 is present in a density of 0.05 to 0.6 compounds/nm².

6. (Previously Presented) The solid substrate of claim 1, which is a glass, a silicon wafer, an indium tin oxide (ITO) glass, an aluminum oxide substrate, or a titanium dioxide substrate.

7. (Currently Amended) A gene chip comprising the solid substrate of claim 1 and a DNA capable of selectively interacting with a DNA to be assayed.

8. (Currently Amended) A protein chip comprising the solid substrate of claim 1 and a protein capable of selectively interacting with a protein to be assayed.

9. (Currently Amended) A sensor for biomaterial assay comprising the solid substrate of claim 1, wherein the biomaterial is a DNA or protein.

10. (Previously Presented) The solid substrate of claim 1, wherein the biochip is selected from the group consisting of a gene chip, a protein chip and a sensor for biomaterial assay.

11. (Previously Presented) The solid substrate of claim 1, wherein the compound of Formula 1 is bonded to the solid substrate via a covalent bond or a non-covalent bond.

12. (Cancelled)